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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/548,892	04/13/2000	Thomas I. Insley	52942USA6A	7476

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EXAMINER

MARKHAM, WESLEY D

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/20/2003

23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/548,892

Applicant(s)

INSLEY ET AL.

Examiner

Wesley D Markham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-51 is/are pending in the application.
- 4a) Of the above claim(s) 23 and 24 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-31, 34-38 and 42-50 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 7, 9-17, 22, 32, 33, 40 and 41 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 8, 18-21, 39 and 51 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application as paper #21 on 1/13/2003 after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action (i.e., the final Office Action, paper #17, mailed on 10/16/2002) has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/13/2003 (i.e., amendment E, paper #22) has been entered.

Response to Amendment

2. Acknowledgement is made of applicant's amendment E, filed as paper #22 on 1/13/2003, in which Claims 1, 18, 25, 31, and 33 were amended, Claim 2 was canceled, and Claims 34 – 51 were added. Claims 1 and 3 – 51 are currently pending in the instant application, and Claims 23 and 24 stand withdrawn from further consideration by the examiner as being drawn to a non-elected invention. An Office Action on the merits follows.

Claim Objections

3. The objection to Claim 31, set forth in paragraph 2 of the previous Office Action (i.e., the final Office Action, paper #17, mailed on 10/16/2002), is withdrawn in light of applicant's amendment E in which a typographical error in the claim was corrected.

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4. Claims 39 and 51 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, Claims 39 and 51 both depend from independent Claim 25. Claim 39 recites that the controlled environment further comprises a liquid, and the method further comprises placing the article in the liquid and decreasing the pressure on the atmosphere such that at least a portion of the liquid evaporates into the atmosphere. Claim 51 recites that the controlled environment further comprises a liquid, and the method further comprises altering a first property of the environment such that at least a portion of the liquid evaporates into the atmosphere. These limitations are already present in independent Claim 25, and therefore Claims 39 and 51 fail to further limit Claim 25.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. The rejection of Claim 25 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, set forth in paragraph 4 of the previous Office Action, is withdrawn in light of applicant's amendment E.

7. Claims 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Specifically, Claims 40 and 41 recite the limitations "altering the property" and "said altering" in line 1 of the claims, respectively. There is insufficient antecedent basis for these limitations in the claims. For the purposes of examination only, the examiner has interpreted the limitations "altering the property" and "said altering" to be equivalent to "condensing the vapor" and "said condensing", respectively, in order to correspond to independent Claim 25 (from which Claims 40 and 41 depend).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order

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for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. The rejection of Claims 1, 3, 4, 7, 10, 11, and 33 under 35 U.S.C. 103(a) as being unpatentable over Sidles et al. (USPN 4,351,789) in view of Agostini et al. (USPN 6,172,137 B1), set forth in paragraphs 11 – 12 of the previous Office Action, is withdrawn in light of applicant's amendment E. Specifically, independent Claims 1 and 33, as amended, require the electret to exhibit a persistent electric charge. This limitation is not taught or reasonably suggested by the combination of Sidles et al. and Agostini et al.
12. Claims 1, 3, 4, 7, 12, 14 – 17, 22, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popov et al. (Russian Document Number 423483) in view of Angadjivand et al. (USPN 5,496,507) for the reasons set forth in paragraph 14 of the previous Office Action (which refers to paragraphs 7, 8, and 15 of the non-final Office Action, paper #14, mailed on 4/3/2002) and below.
13. Amended independent Claim 1 (from which Claims 3, 4, 7, 12, 14 – 17, and 22 depend) and amended independent Claim 33 further require that the electret exhibit a persistent electric charge. This limitation is taught by the combination of Popov et al. and Angadjivand et al. Specifically, Popov et al. teach that prior art charged filter materials lose their charge in the absence of an electrical field, and that their method overcomes this problem (i.e., the cloth has a persistent electric charge)

(background section of Popov et al.). Further, the examiner notes that the combination of Popov et al. and Angadjivand et al. teaches all the process steps / limitations of the applicant's claims, specifically independent Claims 1 and 33. Therefore, unless essential process steps / limitations are missing from the applicant's claims, the electret of the combination of Popov et al. and Angadjivand et al. would have inherently exhibited a persistent electric charge. Additionally, amended independent Claims 1 and 33 further require that the dielectric article be "disposed in the controlled environment". The combination of Popov et al. and Angadjivand et al. meets this limitation. As defined by the applicant on page 2 of the specification as filed, a "controlled environment" is a surrounding whose volume, pressure, temperature, or a combination thereof, can be regulated and/or altered in a predetermined manner. Importantly, the simple recitation of a "controlled environment" in the claims does not require actually regulating and/or altering the volume, pressure, and/or temperature of the surroundings. Such a recitation simply requires that such properties are capable of being regulated and/or altered. This is the case in the combination of Popov et al. and Angadjivand et al. For example, consider the area immediately surrounding and containing the substrate (i.e., the fibers / webs) of Popov et al. to be the "surroundings". In the combination of Popov et al. and Angadjivand et al., vapor is capable of being introduced into area of the substrate (i.e., the "surroundings") in order to contact the substrate. By doing so, at least the localized pressure immediately around the substrate (i.e., where the condensation occurs) is "regulated" and/or "altered" by the passing vapor that wets

the substrates. As another example, consider placing a heater in the vicinity of the substrate of the combination of Popov et al. and Angadjivand et al. The heater would regulate and/or alter the temperature of the surroundings. Therefore, the area around the substrate is a "controlled environment", and the substrate / dielectric article is "disposed in the controlled environment" as required by the applicant's claims. The fact that a heater may not be recited in Popov et al. and/or Angadjivand et al. is irrelevant because no actual regulation and/or alteration of the "controlled environment" is required by the claims.

14. Claims 10, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Popov et al. (Russian Document Number 423483) in view of Angadjivand et al. (USPN 5,496,507), and in further view of Coufal et al. (USPN 5,280,406).
15. The combination of Popov et al. and Angadjivand et al. teaches all the limitations of Claims 10, 11, and 13 as set forth in paragraph 13 above, except for a method wherein the polar liquid is an aqueous liquid (Claim 10), preferably consisting essentially of water (Claim 11), or comprises a fluorocarbon (Claim 13). However, Popov et al. do teach a number of suitable liquids, such as isopropyl alcohol, methanamide, ethyl alcohol, and dimethylformamide, and teach that the liquid utilized should have a dielectric constant of from 15 to 115 (background section). Coufal et al. teach that it was known in the art of charging a dielectric article to form an electret at the time of the applicant's invention that water could be used as an efficient charging medium, and that water has a dielectric constant of 78.25 (Col.3,

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lines 7 – 61). The dielectric constant of water, as taught by Coufal et al., is within the range desired by Popov et al. Therefore, it would have been obvious to one of ordinary skill in the art to utilize water as the liquid vapor in the process of the combination of Popov et al. and Angadjivand et al. with the reasonable expectation of (1) success, as Popov et al. teach a desired range of dielectric constant values, water having a dielectric constant that falls within that range, and Coufal et al. teach that water is an effective charging medium for charging a dielectric article to form an electret, and (2) obtaining the benefits of utilizing water as opposed to the liquids taught by Popov et al., such as reduced cost and ease of availability. These benefits would have easily been recognized by one of ordinary skill in the art at the time of the applicant's invention. With regards to Claim 13, Coufal et al. teach that fluorocarbons such as dichlorodifluoromethane and trichlorotrifluoroethane are the best liquids for charging a dielectric article (Col.3, lines 55 – 61). Therefore, it would have been obvious to one of ordinary skill in the art to utilize one of these fluorocarbons as the liquid vapor in the process of the combination of Popov et al. and Angadjivand et al. with the reasonable expectation of successfully charging the article as desired by Popov et al. and Angadjivand et al. by using a liquid that is one of the best liquids for charging, as taught by Coufal et al.

16. Claims 1, 3, 4, 7, 9 – 11, 14 – 17, 22, 32, and 33 are rejected under 35 U.S.C.

103(a) as being unpatentable over Angadjivand et al. (USPN 5,496,507) in view of Pike et al. (USPN 5,759,926) for the reasons set forth in paragraph 18 of the

previous Office Action (which refers to paragraph 11 of the non-final Office Action, paper #14, mailed on 4/3/2002) and below.

17. Amended independent Claim 1 (from which Claims 3, 4, 7, 9 – 11, 14 – 17, and 22 depend) and amended independent Claim 33 further require that the electret exhibit a persistent electric charge. This limitation is taught by the combination of Angadjivand et al. and Pike et al. (Col.1, lines 55 – 65, and Col.15, lines 10 – 12 of Angadjivand et al.). Further, the examiner notes that the combination of Angadjivand et al. and Pike et al. teaches all the process steps / limitations of the applicant's claims, specifically independent Claims 1 and 33. Therefore, unless essential process steps / limitations are missing from the applicant's claims, the electret of the combination of Angadjivand et al. and Pike et al. would have inherently exhibited a persistent electric charge. Additionally, amended independent Claims 1 and 33 further require that the dielectric article be "disposed in the controlled environment". The combination of Angadjivand et al. and Pike et al. meets this limitation. As defined by the applicant on page 2 of the specification as filed, a "controlled environment" is a surrounding whose volume, pressure, temperature, or a combination thereof, can be regulated and/or altered in a predetermined manner. Importantly, the simple recitation of a "controlled environment" in the claims does not require actually regulating and/or altering the volume, pressure, and/or temperature of the surroundings. Such a recitation simply requires that such properties are capable of being regulated and/or altered. This is the case in the combination of Angadjivand et al. and Pike et al. Specifically,

Angadjivand et al. teach that a vacuum is provided beneath a porous support supporting the fibrous web (i.e., the dielectric article) during the charging process (i.e., equivalent to the steam wetting / condensation process suggested by the combination of Angadjivand et al. and Pike et al.) (Col.4, lines 10 – 19). As such, the environment in which the web of Angadjivand et al. is disposed is a “controlled environment” because the pressure of the surroundings can clearly be regulated and/or altered in a predetermined manner (i.e., by the use of a vacuum). As another example, consider placing a heater in the vicinity of the substrate of the combination of Angadjivand et al. and Pike et al. The heater would regulate and/or alter the temperature of the surroundings. Therefore, the area around the substrate is a “controlled environment”, and the substrate / dielectric article is “disposed in the controlled environment” as required by the applicant’s claims. The fact that a heater may not be recited in Angadjivand et al. and/or Pike et al. is irrelevant because no actual regulation and/or alteration of the “controlled environment” is required by the claims.

Response to Arguments

18. Applicant’s arguments filed on 1/13/2003 have been fully considered but are not persuasive.
19. Specifically, the applicant argues that neither Popov et al. nor Angadjivand et al. suggests condensing vapor from the atmosphere of a controlled environment onto a dielectric article disposed in the controlled environment. Specifically, the applicant

argues that neither Popov et al. nor Angadjivand et al., alone or in any combination, teaches a "controlled environment". In response, the examiner disagrees. Both the environments of Popov et al. and Angadjivand et al. are "controlled environments" as defined by the applicant (please see paragraphs 13 and 17 above, in which the applicant's arguments regarding this point have been fully addressed). The applicant states that, when relying upon a theory of inherency, the Office Action must set forth a basis in fact and/or technical reasoning to support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the prior art. In response, the examiner has set forth this basis in paragraphs 13 and 17 above. Specifically, the examiner has set forth sound technical reasoning as to why the environments of Popov et al. and Angadjivand et al. are "controlled environments" as defined by the applicant on page 2 of the specification as originally filed. The applicant goes on to state that it is well established that an obviousness rejection cannot be predicated on that which is unknown. In response, the obviousness rejections made by the examiner are not based on that which is unknown. The examiner agrees with the applicant that neither Popov et al. nor Angadjivand et al. explicitly refer to the environments in which their processes are performed as "controlled environments". However, the environments of Popov et al. and Angadjivand et al. are "controlled environments" under the applicant's broad definition (see paragraphs 13 and 17 above). One of ordinary skill in the art would have recognized the environments of Popov et al. and Angadjivand et al. as such based on the same reasoning used by the examiner. Therefore, the obviousness

rejections involving Popov et al. and Angadjivand et al. are not based on that which is unknown.

Allowable Subject Matter

20. Claims 25 – 31, 34 – 38, and 42 – 50 are allowed. Specifically, independent Claim 25 (from which Claims 36 – 38 and 42 – 50 depend) requires making an electret by placing a dielectric article in a liquid of a controlled environment, condensing vapor from the atmosphere of the controlled environment onto the dielectric article to form a condensate thereon, decreasing the pressure on the atmosphere to evaporate at least a portion of the liquid, and then drying the article. This specific condensation process used to form an electret is not taught or reasonably suggested by the prior art of record, alone or in combination. Therefore, Claim 25 is allowed. As Claims 36 – 38 and 42 – 50 depend from Claim 25, these claims are also allowed.

Independent Claims 26 and 27 require particular methods of condensing vapor from the atmosphere of a controlled environment, specifically increasing the pressure on the atmosphere (Claim 26) or performing an adiabatic expansion (Claim 27), that are not taught or reasonably suggested by the prior art or record in a process of making an electret as claimed by the applicant. Therefore, Claims 26 and 27 are allowed. Independent Claim 28 (from which Claims 29 – 31 depend) requires altering a first property of a controlled environment to evaporate a portion of liquid into the atmosphere of the controlled environment, and altering a second property of the controlled environment in order to condense the vapor onto the surface of a

dielectric article. This specific evaporation / condensation process used to form an electret is not taught or reasonably suggested by the prior art of record, alone or in combination. Therefore, Claims 28 – 31 are allowed. Independent Claim 34 requires altering the volume of a controlled environment to evaporate a portion of liquid into the atmosphere of the controlled environment, and altering the volume of the controlled environment in order to condense the vapor onto the surface of a dielectric article. This specific evaporation / condensation process used to form an electret is not taught or reasonably suggested by the prior art of record, alone or in combination. Therefore, Claim 34 is allowed. Independent Claim 35 requires altering at least one property selected from the group consisting of volume, pressure, or temperature of a controlled environment in order to condense vapor onto a dielectric article in the process of forming an electret. This specific condensation process used to form an electret is not taught or reasonably suggested by the prior art of record, alone or in combination. Therefore, Claim 35 is allowed.

21. Please note that Claims 39 and 51 have been objected to for the reasons set forth in paragraph 4 above, but no art has been applied against the claims.
22. Please note that Claims 40 and 41 have been rejected under 35 U.S.C. 112, second paragraph, for the reasons set forth in paragraph 8 above, but no art has been applied against the claims.
23. Claims 5, 6, 8, and 18 – 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the

limitations of the base claim and any intervening claims. The examiner's reasons for indicating allowable subject matter are set forth in paragraphs 23 – 24 of the non-final Office Action, paper #4, mailed on 4/11/2001.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (703) 308-7557. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



WDM
March 18, 2003

Wesley D Markham
Examiner
Art Unit 1762



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